TRANSACTIONS

OF THE

PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, May 7, 1906.

The President, JOHN B. ROBERTS, M.D., in the Chair.

OSTEOTOMY FOR ADOLESCENT RACHITIS.

DR. JAMES K. YOUNG presented a lad, fifteen years of age, who was admitted to the Polyclinic Hospital June 10, 1905, with a well-marked genu varum of the left leg, which had developed during the preceding three months. The shortening was considerable, and he wore a high shoe until the time of the operation. He sought relief from the pain and disability caused by the deformity in the joint. The point of greatest deformity in the bone was just below the tuberosity of the tibia.

Osteotomy of the tibia and fibula was performed at the point of greatest deformity. He was dressed in a fracture-box with compresses, and the recovery was uneventful except for a consecutive hæmorrhage which occurred from the fibular wound. Dr. Young said that osteotomy at this point is exceedingly difficult, on account of the danger of wounding the anterior tibial artery, the peroneal nerve, and the posterior tibial artery, and also because the section has to be very freely made on account of being very near the joint, but the result of the osteotomy in this case is perfect.

ANASTOMOSIS OF THE EXTERNAL AND INTERNAL POPLITEAL NERVES FOR INFANTILE PARALYSIS.

DR. JAMES K. YOUNG reported the case of a girl seven years of age, who applied to the Polyclinic Hospital November 29, 1904, on account of infantile paralysis of the left leg.

When two years old a paralysis of the left leg developed, so that she could not walk for six weeks. Was taken to various hospitals and treated by electricity and massage, after which she was enabled to walk. Had had no treatment for several years. She was a well-nourished child, well developed for her years. Left leg showed shortening, and there was a limp present in left leg.

Measurements—

Right leg....	Length, 23 in.	Calf....9½ in.	Thigh....12½ in.
Left leg.....	Length, 22¼ in.	Calf....6½ in.	Thigh....11½ in.

The entire distribution of the motor-tract of the external popliteal was paralyzed except the extensor longus digitorum, which showed a very feeble power of extension, only to be detected by careful observation. Sensation was normal.

Operation of nerve anastomosis, suggested by Dr. Wm. G. Spiller, was performed December 8, 1904. The operation consisted in a total central peripheral transplantation of the external popliteal into the internal popliteal nerve.

The technique of this operation does not differ from that employed in nerve anastomoses of other parts. The object sought is to transplant the nerve in such a manner as to place the central nerve axis of the paralyzed nerve in the same direction as the central nerve axis of the sound nerve.

The region was exposed by an incision six inches long, beginning at the middle of the posterior aspect of the thigh and terminating at the inner side of the biceps tendon. The external popliteal was first exposed and then the internal popliteal. The external popliteal was divided and attached to an incision in the internal popliteal. It was held in place by three chromicized catgut sutures. The wound was closed with catgut sutures and dressed in a plaster-of-paris case.

Sensation in the toes over the distribution of the musculocutaneous nerves returned in twenty-four hours. For three months afterward there was no improvement in the motor power or in the growth of the limb. Growth was then resumed and has since continued uninterrupted and more rapid, and the circulation has improved. There has been no loss of power in the extensor longus digitorum, but a slight increase of function, and the limb is more useful than before the operation.

DR. WILLIAM G. SPILLER said that in this case in which only a little motion was preserved in the extensor longus digitorum before operation, the question arose as to whether the nerve in this muscle should be sacrificed. As only slight power persisted it seemed proper to sacrifice the nerve. It would not be destroyed by the operation, but its power would be distributed over the entire region of the popliteal.

DR. YOUNG, in closing, replied to a question as to whether the operation of anastomosis was of value in cases in which distinct reactions of degeneration were present. Dr. Young was at one time extremely doubtful that benefit was derived from anastomosis in such cases. After hearing Hoffa's statements at Atlantic City a few years ago he is inclined to believe that restoration is possible even when the reactions of degeneration are present. The appearance of the muscles themselves is the best guide to prognosis in these cases. The color varies from a dark red to pink or to a yellow tinge. The last indicates that the muscle is fatty; in these the reactions of degeneration are most marked. The reactions are in all cases difficult to determine, as admitted by neurologists, and may in some instances not be obtained. One is not sure that degeneration is not present even when the reaction is lacking. As to the technic of anastomosis, some surgeons do not employ sutures in the sheaths of the nerves. Dr. Young prefers to pass the anastomosing nerve entirely through the opening in the other and then suture at three points. The nerve then falls back until the ends of the axis-cylinders are in direct apposition with the same structures in the sound nerve. The new nerve in this way grows directly into the central axis of the sound nerve. The placing of three sutures refers only to nerves large enough to accommodate so many; in small nerves two or even one will have to suffice.

THE RELATION OF THE TECHNIQUE OF NURSES AND OF HOSPITAL APPARATUS TO THE HEALING OF WOUNDS.

DR. CHARLES P. NOBLE by invitation read a paper with the above title (for which see page 431).

DR. GEORGE ERETY SHOEMAKER said there was possibly a needless elaboration in some of the points detailed by Dr. Noble, but at the same time there is no doubt that surgeons cannot be too careful in securing asepsis. Boiled rubber gloves for the nurse who is preparing the patient solve some of the problems. A source of infection in operative cases is the slipping of the dressing applied by the nurse after preparing the operation site. This is especially true in cases in which plastic precede abdominal operations. He believes the free use of formalin as recommended by Dr. Noble will be found to cause a dermatitis in some nurses. In the hospital where he does much of his work they put a formalin solution in the wash-basins of the operating-room one hour before using them, but the hands are washed in running water. The stationary wash-basin may be a prolific source of infection.

Dr. James K. Young remarked that nothing had been said by Dr. Noble regarding the use of gloves. He always uses rubber gloves and thus eliminates one source of infection.

Dr. Gwilym G. Davis regards the boiling of basins as a perfectly satisfactory plan. At the Orthopedic Hospital they use a large, square, steam-heated box for this purpose. He prefers that the nurses in the operating-room should wear gloves, just the same as do his assistants. As to the dirty basins for washing the hands, that feature can easily be avoided by the use of running water and the rose spray.

Dr. John B. Roberts said an important point in this question of asepsis seems to be that no one can do good surgery unless he is in absolute control of a hospital. The value of this feature is shown by the excellent suggestions of Dr. Noble. Such details as he enumerates cannot be carried out in a hospital where four or six surgeons change at intervals, as in one institution with which Dr. Roberts is connected. The preparation of the nurses is an important part of surgical technique. In this connection it may be said that practically all surgeons are guilty of hurrying the nurses and not giving them time properly to attend to aseptic technique when an operation is at hand. In addition to those already named, a source of infection is the exposure of wounds often seen during ward visits. This is particularly true of wounds about the groin or in other places difficult to bandage, the wound being uncovered by the slipping of the dressing improperly applied by the resident who dressed the case.

Dr. Noble, in closing, said he was not at first prepared to believe that infection of wounds came from infection of the skin before operation, but a series of infections had conclusively proved its possibility. As to Dr. Shoemaker's statements regarding the impracticability of formalin, all the nurses in his hospital have used it for some years. Two or three thought it caused dermatitis. They were permitted to substitute bichlorid for the formalin. There is no difficulty with its use except in cases of idiosyncrasy. Regarding sterilization of the waste-cans in the wards, if one sees how easy it is to do this he would no longer be willing to let them go without it. Dr. Noble has for years used rubber gloves. They are of great value in keeping the surgeon's skin from infection, and also for protecting the wound, thus working both ways. He wears them in all except trifling operations. The rose spray installed in the hospital as described by him is the same type as mentioned by Dr. Davis. It can be manipulated by the feet or by the elbow of the surgeon. It works by an ordinary lever pressed in by the feet, the latter being aided by a catch which holds the lever open after it is pressed by the foot. To mix the water properly there is an ordinary valve shut-off on both hot and cold supply-pipes. In manipulating the flow of water in any way desired, the surgeon does not need to use his hands at any time.

DISLOCATION OF A VERTEBRA.

Dr. Edward Martin (and by invitation, Dr. William G. Spiller) reported the case of a boy, an athlete, who was wrestling. His opponent was holding him with his head on the ground and endeavoring to force down his shoulders. Suddenly the boy collapsed and became totally paralyzed. When he was examined there at once arose the question of operation. There was evidence of either a total transverse lesion or of a twist or stretch of the cord. It was decided to wait until this point was decided. The persistence of the paralysis for three days furnished proof of a total transverse lesion. Whether it was due to a dislocation of a vertebra or to a tear could not be determined. X-ray examination was unsatisfactory, but seemed to show a lesion of the sixth cervical vertebra. Laminectomy appeared to offer nothing, and hence it was not performed. In spite of all that is said to the contrary, laminectomy is not a safe procedure. If, however, his neck was injured in this way, Dr. Martin would like the operation done. It gives a possible chance of replacing a bony fragment or of removing a clot, and at least would hasten death if it did not relieve. Dr. Martin's experience with laminectomy is that improvement after the operation is the same as occurs in cases treated without operation. The lesion in the case reported proved to be a luxation of the seventh cervical vertebra which had been spontaneously reduced, there being no fracture and yet a complete transverse lesion of the cord.

Dr. Spiller said that when he examined the young man, a few hours after the injury, there was complete paralysis of the lower extremities. Sensation was completely lost as high as the umbilicus, and there was a zone of disturbed sensation between the umbilicus and the nipple line, by the following day the area of anæsthesia had extended as high as the third rib. The reflexes were entirely absent in the lower extremities. There was voluntary movement of the shoulders, the elbows, and the wrists. There was no grasp in the right hand and but little in the left. The signs were those of complete transverse lesion of the cord, and the level of the lesion was easy to determine. The disturbances of sensation on the inner side of each upper limb and the loss of power in the muscles of the hands—*i.e.*, in the distribution of the first thoracic and eighth cervical roots, pointed to a lesion in the corresponding segments of the cord, and hence the case was perfectly clear. All who saw the patient agreed that operation was not advisable. The question of operating in these cases is now greatly in dispute. Dr. Spiller is conservative in this regard and doubts if laminectomy is of value in fracture of the vertebræ. Some surgeons say that the chief cause of the paralysis is pressure by displaced bone and that restoration of function will follow removal of the fragments. As a matter of fact there is not extramedullary hæmorrhage in most cases. Usually there is disturbance of the cord due to the injury that produced the fracture, and whatever damage may have been done by displaced bone has occurred at the moment the displacement occurred. When the cord is thus injured no removal of pressure, if this exists, can restore it. In most instances the cord is mashed, and often there is softening and even hæmorrhage within the cord when the cord externally appears normal. Autopsy in the case under discussion showed there was no hæmorrhage on any part of the cord, either external or internal to the dura. At the eighth cervical segment was marked compression of the cord, with swelling above and below. Microscopically marked degenerative changes are present in and above the compressed area, hæmorrhage within, and intense disintegration of the cord being shown. This same condition is found in many of the cases of similar injury to the cord. There is also some change in the sacral region in this case and Dr. Spiller is inclined to believe there was a temporary dislocation in the lumbar vertebræ, although this was not suspected before death or at the necropsy. The lower end of the cord is partly separated from the rest or reduplicated. This is possibly a congenital malformation.

Dr. William J. Taylor said that he had now under his care a man who eighteen months ago fell 42 feet, this rendering him unconscious for several hours. He was paralyzed for six weeks after the accident, when Dr. Taylor first saw him. By the X-rays it was thought possible to detect a fracture-dislocation of the first lumbar vertebra. The patient was put on the table in preparation for laminectomy, but a careful examination before ether was given revealed slight motion in one leg. The operation was not done and a plaster jacket was applied. The patient has continued improving up to the present time. He was in the hospital from September to February. He now has perfect motion and has no difficulty in walking. The greatest trouble now is when he leans over with the knees fixed, as this gives him intense pain down both thighs. The pain is not noticed if the knees are bent at the time he stoops.

Dr. James K. Young said he had under his care for many years a girl who showed the happy results of laminectomy. She was an aeronaut who fell 100 feet and sustained a fracture in the lower dorsal region and was operated upon by laminectomy by the late Dr. Ashhurst. He took the chances of operating and removed a fragment of bone. The patient is now able to walk. There is of late years a tendency among surgeons not to operate upon cases of tuberculous paraplegia. Dr. Young does operate upon such cases. One patient referred to him by other surgeons now, as the result of operation, has the use of her limbs.

Dr. Charles H. Frazier said regarding the etiology of the injury in the case reported, Dr. McKenzie, the physical instructor, stated that at the time of the accident the boy was much fatigued from long-continued exercise and wrestling, and he believes the muscles failed to give proper support to the parts involved. Dr. McKenzie does not know of any other case of like injury.

Dr. Martin, in closing, said the possible lesion in the lumbar region would help explain one puzzling symptom. In the case of a lesion high in the cord there should be incontinence rather than retention of urine. Here there was retention, which was suggestive of a lesion in the lumbar region.

AN EXPERIMENTAL STUDY OF SUTURE OF ARTERIES, WITH A DESCRIPTION OF A NEW SUTURE.

Dr. George M. Dorrance by invitation read a paper, with the above title (for which see page 409). He exhibited a series of specimens and demonstrated the application of the suture.

PERFORATION OF SKULL BY IRON ROD.

Dr. C. G. Ross reported the case of a man who was brought to the hospital March 20, with the history of having been struck over the leg center of the left side of the head by the end of a three-eighths-inch steel rod six-and-one-half feet long, which fell fifty feet. The pupils were dilated and did not react, and vomiting had occurred. There was doubt as to the advisability of immediate operation. The man did not develop convulsions. Operation was finally performed and showed that the iron had made a round hole in the skull as accurately as it could have been done by a trephine. The superior longitudinal sinus had been entered, but the button of bone prevented hæmorrhage. The inner table of the skull was compressing the leg center. When removal was accomplished, hæmorrhage was severe, and packing had to be kept in for seven days. When the packing was removed, motion in the leg was possible, and the man finally walked out of the hospital.

ENDOTHELIOMA OF THE CAROTID GLAND.

Dr. J. Chalmers DaCosta read a paper with the above title (for which see page 393).

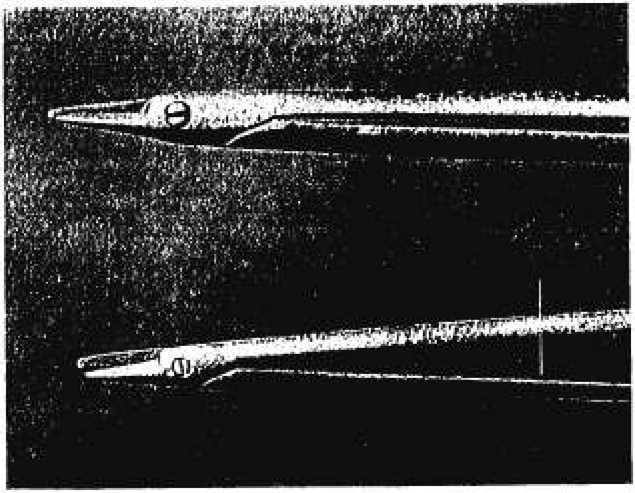

FIG. 1.—Scissors with one blade blunt pointed and hooked for removal of invisible or deep sutures.

SCISSORS FOR THE REMOVAL OF DEEP-SEATED INVISIBLE SUTURES.

Dr. George Erety Shoemaker exhibited scissors (Fig. 1) for the removal of deep-seated invisible sutures. He said that the suture or ligature which passes through dense structures in the lower part of its path is apt to bury its superficial portion with the knot, especially when tied upon mucous surfaces. There are certain localities, such as the rectum, the upper portion of the vagina, certain deeper parts of the wound in operations for gall-bladder drainage, and after vaginal hysterectomy, where ligatures or sutures may be almost or quite invisible and, because of distance from the operation, difficult to remove. The inside sutures of a properly-conducted Emmett operation for perineal repair are difficult to reach without such stretching of the parts as will imperil the recent union. For a number of years he had used scissors which safely remove such sutures, without laceration or over distention of the parts. These differ essentially from others having a hook on one or both blades, and may be described as follows: One blade has a blunt or probe point turned up not more than a twelfth of an inch, or to a point in a line with the back of the other blade when closed. The second blade is so much shorter than the first that there is just room for a silk wormgut suture to lie in the grasp of the hook, without being thrown out as the scissors are opened. The entire length of the instrument should be at least six-and-a-half inches. In order to use these scissors successfully, one end of the suture only should be left long after tying, the other being cut off close to the knot. For removal this long suture end is grasped and put upon the stretch, thereby furnishing a guide for the point of the scissors down to the loop to be cut in the depths of the part. The scissors, being slid along this guide, are introduced closed like a probe into the loop of suture, which is readily found when under the tension described. The suture is engaged in the hooked blade with the scissors still closed. The latter are then moved a little to one side to avoid cutting a knot. The tension is now removed from the long suture end previously held taut, and if the hook does not at once become disengaged it is evident that it is within the real loop of the suture. The scissors may now be confidently opened and shut, as the short blade does not throw out the suture, which will now slip between the blades and the entire suture may be drawn out by the long end above referred to.

The important points are, that the scissors should be introduced closed, that no part of the hook should be sharpened, and that all edges be somewhat dull, in order that the suture may not be prematurely cut while feeling for the proper adjustment of the loop.

These scissors were made for him by Mr. Gemrig about ten years ago and have been used with great satisfaction ever since, particularly after vaginal hysterectomy and perineal operations.